Abstract No: 21 ***Life Sciences***

DIROFILARIASIS IN DOGS BROUGHT TO THE VETERINARY TEACHING HOSPITAL, PERADENIYA, SRI LANKA

S.S. Thilakarathne[1,2], N. Wijayawardhane[3], P.K. Perera[2], C. Mallawa[3] and R.S. Rajakaruna[2*]

[1] Department of Parasitology, Faculty of Medicine, University of Ruhuna, Galle, Sri Lanka
[2]Department of Zoology, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka
[3]Department of Veterinary Clinical Sciences, Faculty of Veterinary Medicine and Animal Science, University of Peradeniya, Peradeniya, Sri Lanka
[*]rupika.rajakaruna@sci.pdn.ac.lk

In 2016, Sri Lanka was acknowledged by the World Health Organization for having eliminated human lymphatic filariasis as a public health problem. However, human dirofilariasis caused by zoonotic *Dirofilaria repens* has shown an upward trend in incidence in recent years all over the country, particularly in the Central and Western Provinces. Dogs are the main natural host of the infection. The objective of this study was to study *Dirofilaria* infections and evaluate the phylogenetic relationship of *Dirofilaria* species in dogs brought to the Veterinary Teaching Hospital at the University of Peradeniya clinic for either vaccination or a regular checkup. Blood samples were collected from dogs and were morphologically analyzed by Modified Knott's Technique, followed by molecular characterization using pan-filarial primer and phylogenetic analysis by the Neighbor-Joining method. Among the dogs examined, 28% (24/87) were positive for *D. repens.* Dirofilariasis infection in males (39%) was significantly higher than females (15%; Chi-square test, χ^2 =0.447, p=0.011). There was no significant difference in the infection among dog age groups or breeds (χ^2=3.711, p=0.054). Moreover, the intensity of infection (mf/ml) among sex, age or breed did not significantly differ. Sequencing results of the *5.8S-ITS2-28S rDNA* showed that the nucleotide sequences were 63% identical to those of *D. repens* reported from South India, and sequences obtained in the present work show greater similarity between each other. The high number of *Dirofilaria* cases, with more than one-fourth of dogs, could increase the risk for human dirofilariasis in Sri Lanka. Thus, an assessment of the social and eco-epidemiological factors that influence the distribution dynamics of this zoonotic disease is needed for reliable prediction and the potential emergence of new areas of endemicity.

Financial assistance from the National Research Council, Sri Lanka (Grant No. 20-083) and the University of Peradeniya Research Grants (Grant No. URG/2018/39/S) are acknowledged.

Keywords: Dog, Domestic, Dirofilariasis, *Dirofilaria repens*, Sri Lanka